Final Report for Fresno Regional Comprehensive Residential Retrofit Program

Prime Contractor Name: City of Fresno

Contract Agreement Number: 400-09-032

Contract Term (reporting period): 10/13/2010 to 06/14/2012

Project Manager: Joseph Oldham

Date Report Submitted: Draft submitted 05/18/2012

(1) PROGRAM OVERVIEW:

The Fresno Regional Comprehensive Residential Retrofit Program (Home Energy Tune-up) was designed to provide homeowners with unbiased and trusted information about their opportunity to reduce energy costs through energy efficiency retrofits of their homes. The program provides free, in-home HERS II Whole House Rater analysis for homeowners in Fresno, Madera, Tulare, Kings, and Kern Counties and is designed to educate and motivate homeowners to perform retrofit work.

The program directs homeowners to Energy Upgrade California and other rebate opportunities offered by the Investor Owned Utilities. The program also provides information about financing resources offered locally and nationally such as HUD Powersaver, Title 1 loans, Energy Efficiency Mortgages, and 203K loans.

In addition to education of homeowners, the FRCRR program also provided extensive training courses for contractors in Building Performance Institute certification. The program developed an outreach program for contractors to educate them on the need for BPI certification and then helped them utilize the Home Tune-up Program free energy testing service to build their business.

The FRCRR program was organized to utilize existing expertise developed by the City of Fresno in developing and implementing a free, in-home energy survey program using funding DOE EECBG Formula Grant funding and focused on the residents within the city of Fresno limits.

(2) GOALS AND ACCOMPLISHMENTS:

- Goal: 900 home energy assessments completed by June 14, 2012.
- Goal: 500 home retrofits completed by June 14, 2012.
- Achieved: Completed 1,483 (includes ratings performed under the pilot program).
- Achieved: Estimated 691 home retrofits completed, or 138% of program goal.
- Achieved: Training for 100 contractors to receive BPI Building Analyst certification.
- Achieved: 37% conversion rate from testing to retrofit by homeowners participating in the program.
- Achieved: Energy savings for homeowners retrofitting their homes ranged from 10% to more that 40%.
- Achieved: Homeowner energy cost savings range from $600 to $2,400+ per year.
- Achieved: An average retrofit investment per home of over $4,800.
- Achieved: Outreach and education of over 2.5 million homeowners across 5 counties.
- Achieved: Development of a protocol to allow contractors to use the Home Tune-up energy assessments to grow their business.
- Achieved: Successful integration of the HERS II Whole House Testing protocol into the Energy Upgrade California rebate process.
- Achieved: Successful integration of the Home Energy Tune-up program into the HUD Energy Efficient Mortgage process.

(3) LESSONS LEARNED:

A. HERS Whole House Ratings

The free in-home HERS II Whole House Rater testing was wildly successful! The program exceeded its goal of 900 HERS tests during the contract period by over 200%. The program achieved a 37% conversion rate from the HERS testing completed. Over 690 homes were retrofit as a result of the program (Appendix A). Lessons learned included:

- ***Testing Protocol and Data Collection.*** The FRCRR program learned that a consistent and standardized data collection protocol was necessary to achieve accurate and consistent reports for homeowners at a regional scale. The FRCRR program developed a standardized data collection form with drop down menus on many parameters that could have subjective answers. By limiting the subjective nature of the answers, the standardized form allowed consistency from one rater to another and provided assurance the test data was accurate. This was essential since the FRCRR program used both contracted and city staff to perform the HERS testing.
- ***HERS Testing with Thermal Imaging.*** The Home Tune-up program provided HERS II Whole House Rater testing along with thermal imaging scans to help homeowners actually see where improvements were needed. The thermal scans proved to be excellent selling tools for the program and helped homeowners target their repairs and upgrades.

Recommendation:

- The CEC should develop or adopt a standardized data collection form for the HERS II Whole House Rater Analysis Protocol.
- Include thermal imaging as part of the HERS testing protocol.
- Work needs to be done with the cell phone/smart phone/tablet industry to develop a hand-held tablet-like device that includes a thermal imaging camera plus an application for doing HERS data collection and reporting in real time. This would allow faster analysis and the ability to potentially generate a report for the homeowner while the rater was still in the home.

B. Workforce Training

The FRCRR program trained 100 contractors to receive BPI Building Analyst certification. Some of the lessons learned were:

- ***Timing of the Training is Critical.*** Contractor participation in the training classes was heavily dependent on the timing of the classes. Classes held in the spring and fall were easier to fill than classes held in the summer or winter. Contractors were reluctant to send staff for training during ”busy” seasons when there were many requests for HVAC replacements or servicing.
- **Training Must be Free.** Contractors did not sign up for training when there was upfront cost, even if that cost was reimbursed. Initially, the FRCRR program offered training with a $900 cost rebate through another training program. Contractors refused to sign up saying they could not “carry” the training cost for any period of time waiting for a rebate. Training classes only began to be filled after the training was advertised as totally free.
- **BPI Training Protocol is Flawed.** The BPI training protocol is flawed in that it does not inform the student, if he/she does not get certified, what part of the testing they failed so they can study that section. It forces the student to retake the whole course and pay for a whole new

training session a second time. This approach is not conducive to getting a large workforce trained and casts doubt about the motives of BPI in developing the training protocol.

- **Providing Training Does Not Insure Program Participation.** The FRCRR program trained 100 contractors to receive BPI Building Analyst certification with an average pass rate of 50-70%. This ideally should have resulted in a minimum of 50 contractors promoting and offering the Energy Upgrade California rebate program in the 5 counties served by the FRCRR program. In reality, there are only about 7-10 contractors offering the rebate program in the 5 counties. When asked why they were not promoting or offering the Energy Upgrade California rebate to their clients, many of the contractors trained in the program responded that Energy Upgrade California was too complicated and took too much time for it to make sense with their business model. When questioned further as to why they wanted to get BPI certification, many responded that it was to be prepared for other rebate programs that could be offered in the future. The conclusion that can be drawn from this is that training alone does not drive or incentivize contractors to participate in programs. The program must be attractive on its own merits. Lack of contractor and homeowner participation in Energy Upgrade California and high levels of participation by those same groups in utility single measure rebates demonstrates that simple is better.

Recommendation:

- CEC and the utilities should insist that BPI revise its training protocol to help students understand the areas that they did poorly in so that certification can be achieved faster and at lower cost.

C. Program Marketing and Communication

Homeowner Recruitment

The FRCRR program developed a marketing plan for the Home Tune-up free in-home energy survey program that focused on empowerment of the homeowner to reduce their energy costs through reduction of use. The program marketing brochure's catch phrase was "First step to a more POWERFUL you…" This phrase resonated with homeowners distressed by conditions in the housing market and the general decline in economic conditions. Desperate for help with their personal budgets, homeowners responded positively to the free in-home energy survey program that offered them information about how they could save money through reduction or elimination of wasted energy use. The Home Tune-up program is an empowerment tool for homeowners. Its success is due to its ability to meet a need and create informed decision makers out of homeowners previously unsure of what to do to lower their energy costs. Successful strategies include:

- **Media for Maximum Participation.** Television proved to be the most successful media for getting homeowner participation. Newspapers, radio, direct outreach to churches, community organizations, and home shows were all tried, but television gained the highest continued participation rate. Following 30 and 60 second television ads and a live 30 minute Public Television show, the number of requests for service jumped from 150 to over 400 per month. It is thought the reason for the success of television to sell energy efficiency is because television allows homeowners to see what the testing looks like before they call for the service. Television de-mystifies energy efficiency.
- **Marketing to Create Demand for Energy Efficiency.** The marketing philosophy for the Home Tune-up program was different than most programs supporting Energy Upgrade California around the State. Most other programs marketed to contractors and provided

collateral/additional rebates to help them sell to homeowners. The Home Tune-up Program marketed to homeowners in order to create demand for the contractor services. The other programs' approach was based on an assumption that a market for residential energy efficiency retrofits existed and just needed the proper rebate program offered by contractors to expand. The Home Tune-up Program approach was based on focus group testing in Fresno and Kern Counties that revealed almost no market for energy efficiency retrofits existed because most homeowners did not know they had problems with their homes.

- **On-line Survey Request Portal vs. Phone Call Request.** The FRCRR program used both an on-line survey request portal and a toll-free phone number for residents to request a home energy assessment. The lessons learned were that it takes both methods to achieve program success. The on-line portal was most useful in processing large volumes of requests quickly since it was automated to send homeowner data directly to up to three staff persons that were scheduling the actual survey appointments. Two of these staff were contracted and located in Stockton, CA, and the third was a city staff person located in Fresno. The system worked very smoothly. The direct phone call requests were all handled in Fresno by city staff. The phone system was manned during 7 am to 5 pm, Monday through Friday, except holidays. The live phone call request gave the homeowner an opportunity to ask questions and gave staff the opportunity to get more information about the home being tested and to explain the procedure better. The direct phone call requests were not able to handle large call volume as well as the on-line. It was also more challenging to handle when staff was limited or after holidays.

Contractor Recruitment

Contractors were at first reluctant to participate in the Home Tune-up program due mostly to lack of understanding as to how the program functioned and what was the intended purpose of the program. Once a dedicated contractor liaison was hired to encourage contractors receiving the free BPI training to use the Home Tune-up program as a tool to generate sales, the number of contractors requesting to use the program rose to about 15. Lessons learned were:

- **Face to Face Engagement is Key to Success.** The FRCRR program tried phone contacts with contractors to engage their interest in working with the Home Tune-up Program. This effort was not successful; mainly due to contractors being skeptical of telephone advertising techniques.

  The Program hired a former contractor to act as training and communication liaison between the Home Tune-up Program and contractors being trained in BPI certification. The face to face interaction worked in getting contractors interested in using and referring the Home Tune-up Program to their clients. The face to face time allowed for discussion about the program and how it might work with each specific contractor's business model. To further encourage contractor participation, the FRCRR program developed a special protocol for contractors to use the Home Tune-up Program with their clients. The web page was modified to allow contractors to submit requests for Home Tune-up surveys on behalf of their clients. A special version of the homeowner report without estimated equipment costs was developed to be sent directly to the contractors using the program, provided their homeowner clients had signed a release form.

Recommendation:

- Future marketing and outreach should focus on creating demand from homeowners for energy efficiency services. This effort should be coordinated with the utilities that have the data showing the areas within their service territories which have the highest opportunity for energy efficiency improvement.

D. Rebates

Homeowners were confused by the variety and complexity of the rebates and tax incentives available for energy efficiency upgrades. The FRCRR program developed a comprehensive homeowner report for the Home Tune-up program participants that tried to clarify the rebates and provide guidance to homeowners. Some of the lessons learned were:

- ***Energy Upgrade California.*** This rebate program was too complex and time consuming for most homeowners and contractors to use. The paperwork was onerous for the contractor and homeowners were not interested in doing all the work required to participate in the "whole house" approach all at one time. Program participation workshops for homeowners organized by Ecology Action were poorly attended. Our homeowner polls showed less than 6% of homeowners that participated in the Home Tune-up program used the rebate.
- ***Standard Single Measure Utility Rebates.*** These rebates were used extensively by homeowners participating in the Home Tune-up program. The flexibility of timing and the fact that the process to apply and receive the rebates was simple, made the single measure rebates very attractive for San Joaquin Valley homeowners.
- ***Hybrid Rebate (Flex-Path).*** While the Flex-Path rebate that was developed in LA County and funded outside the Energy Upgrade California Rebate program was not available in the FRCRR program territory, it is believed that rebate program would have been very attractive to homeowners in the San Joaquin Valley. Based on homeowner and contractor feed-back poll information, the fact that it offered a more customized approach for homeowners and had simplified application and processing would have made it attractive to many homeowners and contractors.

Recommendations:

- Energy Upgrade California needs to be streamlined to reduce the paperwork. Adopting the Flex Path rebate approach as outlined below would help the streamlining process.
- The Investor Owned Utilities should adopt the Flex Path Rebate as a standard offering in the Energy Upgrade California program.

E. Financing

The FRCRR Program learned early on that financing was an issue for homeowners in the San Joaquin Valley. Many homeowners owe more on their homes than they are worth and homeowners are wary of added debt. Only loan products with repayment terms from 15–20 years and interest rates below about 8% appear attractive.

- ***Attracting Private Lenders.*** When the Home Tune-up program free in-home HERS II Whole House Rater testing was only available in Fresno and Kern Counties, lenders were not attracted to work with the program. They expressed concern that the program was too limited in terms of communities where it was available to make it interesting for them to collaborate. They noted that they had branches that spanned areas where the program was not offered and that made it difficult to promote the program at some branches and not at others.

  Once the Home Tune-up program was expanded to cover Fresno, Tulare, Kings, and Kern Counties, lenders became more interested in participating. First to recognize the opportunity

was the Educational Employees Credit Union. Their service territory spans Fresno, Tulare, and Kings Counties with nearly 200,000 members. They had developed an energy efficiency loan product that was very attractive for their members and immediately saw the opportunity to partner with the FRCRR Home Tune-up program to expand their service to their members. Another lender that has become interested in using the Home Tune-up program is Sun West Mortgage, a HUD Powersaver loan provider.

Energy Efficiency Mortgages (EEM) are another opportunity for homeowners seeking to finance energy efficiency upgrades. Synergy Homebuyer Services, an EEM facilitator company, has successfully used the Home Tune-up program to allow homeowners to refinance their homes using an EEM, get the home upgraded for energy efficiency, and keep the homeowners from going into foreclosure. The primary reason Synergy Homebuyer Services is using the Home Tune-up program is that the HERS testing from the Home Tune-up program is free and HERS testing costs have been a barrier for homeowners wanting to use EEMs in the past.

- ***Residential PACE.*** Homeowners continue to ask about residential PACE financing and when that would be available. A couple of pilot residential PACE financed projects have been completed in Clovis under the CA PACE program operating in that city. The homes were paid for and had no mortgage, so there were not any lender issues preventing the financing from taking place. Both projects were large solar power arrays valued over $40,000.

Recommendation:

- To attract lenders, the Home Tune-up program needs to be regional in scope. If it is able to continue using CPUC funding, it must be offered across the various utility service territories.

Appendix A: Survey Results

The FRCRR program conducted customer satisfaction surveys and polls of customer retrofit activity twice during the contract period. The most recent poll was completed in early May, 2012 and the results are as follows:

Survey Break Down	#	%
Yes:	108	32%
Plan to do something:	10	3%
Left voicemail:	75	22%
No:	130	39%
Could not make contact:	14	4%
	337	100%
Total % Yes/Plan-To:	128	**38%**
Total Survey kWh Savings:	**170,707**	
Ave per home kWh Savings:	**1,447**	
Use Contractor:	72	67%
EU Rebate:	7	6%
PG&E Rebate:	44	41%